REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-21 are presently pending; and Claims 1-12 are amended by the present amendment.

Support for the amendment to Claim 1 is found in Figures 8 and 9A-9E, and the corresponding written descriptions. The remaining changes to the claims correct minor informalities. Thus, no new matter is added.

The outstanding Official Action rejected Claims 1-5, 9, and 10 under 35 U.S.C. §102(e) as unpatentable over U.S. Patent No. 6,917,642 to Rouphael et al. (hereinafter "Rouphael"); Claims 6-8, 11, and 12 were indicated as reciting allowable subject matter; and Claims 13-21 were allowed.

Applicants acknowledge with appreciation the indication of allowable subject matter. However, since Applicants consider that Claim 1, from which Claims 2-12 depend from, patentably defines over Rouphael as amended, Claims 6-8, 11, and 12 are maintained in dependent form.

Applicants respectfully traverse the rejection of the claims under 35 U.S.C. § 102(e) for the following reasons.

Claim 1 is directed to a receiving process method of a receiving apparatus used in a mobile communication system in which a sending apparatus sends a plurality of code channels as code channel groups to which spreading codes are assigned to a receiving apparatus, and the receiving apparatus receives the code channel groups as received signals. The method includes, *inter alia*, generating received spreading signal sequences of the code channel groups according to the number of received paths. The method further includes removing a received spreading signal sequence, from the received signals, that is a replica of

a signal of an own code channel group of the receiving apparatus transmitted via a path that is different from another path via which the signal of the own code channel group is transmitted.

It is noted that the outstanding Official Action asserts that the feature of removing received spreading signal sequences, as recited in original claim 1, was not positively recited.[1] Applicants respectfully submit that amended Claim 1 positively recites this feature.

By way of summary, the received spreading signal sequences are multipath interference replicas.[2] Applicants submit that one of ordinary skill in the art would understand that multipath interference occurs when a signal travels from a source to a destination via two or more paths, and the components of the signal interfere with each other. Thus, a replica of the transmitted signal causes multipath interference. According to one advantage recognized by the present inventors, signal quality is improved by generating multipath interference replicas and removing the generated replicas as interference.[3]

Turning now to the applied reference, Rouphael describes a method for encoding/decoding data channels in a system having data channel interference cancellation where the data rate for a system for a given user is increased by using a non-orthogonal pilot signal for channelization.[4] More specifically, Rouphael describes providing transmission of data over CDMA radio channels from a base station to a receiving station, and vice versa,[5] where a non-orthogonal pilot signal is removed from the transmitted data.[6]

Figure 2 of Rouphael illustrates CDMA transceivers 140 and 172. With respect to the operation of the transmitter portion of transceiver 140 and the receiver portion of transceiver 172 in Figure 2, Rouphael states the following in column 7, lines 36-54:

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[1] See Official Action of March 1, 2007 at page 5, paragraph 5.
[2] See specification at page 4, lines 26-27.
[3] See specification at page 4, line 25 to page 5, line 9.
[4] See Rouphael, column 5, lines 17-21.
[5] See Rouphael, column 7, lines 16-17.
[6] See Rouphael, column 7, lines 46-50.

> Initially, pilot spreader **201** is used to modulate a non-orthogonal pilot signal such that the pilot signal is spread over an entire channel bandwidth. Concurrently, data spreader **204** is used to spread data over the same channel bandwidth. The spread pilot and data signals are then combined to form a composite signal S(t) which is transmitted to base station **170** for despreading by pilot despreader **202** and data despreader **205**, respectively. The despreaders **202**, **205** are used to recover the non-orthogonal pilot signal and the data signal, respectively, from the transmitted composite signal S(t). The outputs of the pilot despreader **202** and data despreader **205** are fed to an interference canceller **203** which is used to remove interference introduced into the data signal by the non-orthogonal pilot signal. Once the interference from the non-orthogonal pilot signal is removed by the interference canceller **203**, the original data is recovered via dot product calculator **206** and output for later processing by a communications system (not shown).

Thus, Rouphael describes the despreaders 202 and 205 recovering the non-orthogonal pilot signal from composite signal S(t). However, as illustrated in equations 6-9 of Rouphael, the despreading process introduces interference due to the pilot signal.[7] Thus, Rouphael further describes interference canceller 203 removing the non-orthogonal pilot signal as interference to recover the data signal.

Claim 1 is distinguishable over Rouphael as the applied reference fails to disclose or suggest removing a received spreading signal sequence *that is a replica of a signal of own code channel group of said receiving apparatus*. As discussed above, Rouphael describes removing a non-orthogonal pilot signal as interference from a despread composite signal S(t). However, Rouphael describes that the interference associated with the pilot signal is introduced during the demodulation process,[8] not from multipath interference.

For example, Rouphael neither discloses nor suggests that the non-orthogonal pilot signal is transmitted through a multipath environment where a replica of the non-orthogonal pilot signal causes multipath interference as described above. Accordingly, the removed pilot signal is not *a replica of a signal*.

[7] See Rouphael at column 8, line 54 to column 9, line 21.
[8] See Rouphael at column 10, lines 20 to 25.

Claim 1 is further distinguishable over Rouphael as the applied reference fails to disclose or suggest removing a received spreading signal that is a replica of a signal *transmitted via a path that is different from another path via which said signal of said own code channel group is transmitted.* Figure 2 of Rouphael illustrates that the composite signal S(t), which contains the non-orthogonal pilot signal, is transmitted from the transmitting portion of transceiver 140 to the receiving portion of transceiver 172. However, Figure 2 of Rouphael merely illustrates that the composite signal S(t) travels along one path. Thus, the non-orthogonal pilot signal is transmitted along the same path as the data signal. Accordingly, Rouphael fails to disclose or suggest that the non-orthogonal pilot signal is *transmitted via a path that is different from another path via which said signal of said own code channel group is transmitted.*

Therefore, Applicants submit that Rouphael fails to disclose or suggest all of the features of Claim 1 as amended. Thus, Applicants respectfully request that the rejection of Claim 1, and the claims depending therefrom, under 35 U.S.C. §102(e) be withdrawn.

Consequently, in view of the present response, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance.

Respectfully submitted,

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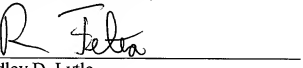

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